

IN THE CLAIMS

1-45 (canceled)

46. (new) A method of imaging a patient comprising:

coupling at least two nuclear medicine detectors to a detector transport member such that the at least two detectors move with the detector transport member, the detector transport member spanning an arc of less than about one hundred eighty degrees about an examination axis;

supporting the detector transport member with a base having a support assembly for receiving the detector transport member; and

rotating the detector transport member about the examination axis to a plurality of imaging positions.

47. (new) A method of imaging a patient in accordance with Claim 46 wherein coupling at least two detectors to a detector transport member comprises coupling a pair of nuclear medicine detectors together such that a detecting face of a first of the pair of nuclear medicine detectors is substantially perpendicular to a detecting face of a second of the pair of nuclear medicine detectors.

48. (new) A method in accordance with Claim 47 wherein coupling a pair of nuclear medicine detectors together comprises coupling a pair of nuclear medicine detectors together such that an edge of the detecting face of the first detector is proximate an edge of the second detector.

49. (new) A method of imaging a patient in accordance with Claim 46 wherein coupling at least two detectors to a detector transport member comprises coupling the at least two detectors to the detector transport member such that a normal centerline of a face of the at least two detectors is oriented substantially orthogonally to the examination axis.

50. (new) A method of imaging a patient in accordance with Claim 46 further comprising positioning a patient through a gap in the detector transport member where the patient is substantially aligned with the examination axis,

51. (new) A method of imaging a patient in accordance with Claim 46 wherein the detector transport member includes an edge and the base includes a support assembly having a groove and wherein supporting the detector transport member comprises engaging the groove with the edge such that the groove and edge oppose a moment load on the edge from the weight of the detector transport member.

52. (new) A method of imaging a patient in accordance with Claim 46 wherein the detector transport member includes a support assembly having a groove and the base includes an edge and wherein supporting the detector transport member comprises engaging the groove with the edge such that the groove and edge oppose a moment load on the groove from the weight of the detector transport member.

53. (new) A method of imaging a patient in accordance with Claim 46 wherein the detector transport member includes a rack and the base includes a complementary pinion and wherein rotating the detector transport member about the examination axis comprises controlling the rotation of an electrical motor coupled to the pinion to perform at least one of move the detector transport member between a plurality of imaging positions and maintaining the detector transport member substantially stationary at an imaging position.

54. (new) A method of imaging a patient in accordance with Claim 53 further comprising positioning the motor in the base.

55. (new) A method of imaging a patient in accordance with Claim 46 wherein rotating the detector transport member about the examination axis comprises rotating the detector transport member less than about one hundred eighty degrees while imaging the patient.

56. (new) A method of imaging a patient in accordance with Claim 55 wherein rotating the detector transport member about the examination axis comprises rotating the detector transport member about ninety degrees while imaging the patient.

57. (new) A method of imaging a patient in accordance with Claim 55 wherein rotating the detector transport member about the examination axis comprises rotating the detector transport member about ninety degrees while receiving images for an about one hundred eighty degree scan of the patient.

58. (new) A method of imaging a patient in accordance with Claim 46 further comprising receiving emission gamma rays using the at least two detectors.

59. (new) A method of imaging a patient comprising:

aligning a patient with an examination axis by moving the patient through a gap in an arcuate detector transport member;

coupling a pair of nuclear medicine detectors together such that a detecting face of a first of the pair of nuclear medicine detectors is oriented substantially perpendicular with respect to a detecting face of a second detector of the pair;

rotating the pair of nuclear medicine detectors about the examination axis through an arc spanning less than about one hundred eighty degrees, the pair of nuclear medicine detectors moving with the detector transport member, said rotating comprises at least one of rotating the detector transport member intermittently between a plurality of imaging positions and rotating the detector transport member continuously from an imaging start position to an imaging finish position wherein the detector transport member spans an arc of less than about one hundred eighty degrees about the examination axis; and

supporting the detector transport member with a base having a support assembly for receiving the detector transport member, the base remaining stationary with respect to the examination axis.

60. (new) A method in accordance with Claim 59 wherein coupling a pair of nuclear medicine detectors together comprises coupling a pair of nuclear medicine detectors together such that an edge of the detecting face of the first detector is proximate an edge of the second detector.

61. (new) A method in accordance with Claim 59 wherein supporting the detector transport member comprises supporting the detector transport member with an arcuate base having an arcuate support assembly.

62. (new) A method for medical imaging comprising:

translating a detector transport member along an arcuate path about an examination axis, the detector transport member spanning an arc of less than about one hundred eighty degrees about an examination axis, at least two detectors being coupled to said detector transport member; and

supporting the detector transport member with an arcuate base having an arcuate support assembly for receiving the detector transport member, the base remaining stationary with respect to the examination axis.

63. (new) A method for medical imaging in accordance with Claim 62 further comprising coupling a pair of nuclear medicine detectors together such that an edge of a detecting face of a first of the pair of nuclear medicine detectors is proximate an edge of a detecting face of a second of the pair of nuclear medicine detectors wherein the detecting faces are oriented substantially perpendicular with respect to each other.

64. (new) A method for medical imaging in accordance with Claim 62 wherein said rotating a detector transport member comprises at least one of rotating the detector transport member intermittently between a plurality of imaging positions and rotating the detector transport member continuously from a imaging start position to a imaging finish position.

65. (new) A method for medical imaging in accordance with Claim 64 wherein said rotating a detector transport member comprises rotating the

detector transport member through an arc of less than about one hundred eighty degrees about the examination axis from the imaging start position to the imaging finish position.

66. (new) An imaging system comprising:

an arcuate detector transport member that extends less than approximately 180 degrees circumferentially about an examination axis;

a base comprising a support assembly for receiving said detector transport member, said base configured to translate said arcuate detector transport member in an arcuate path about said examination axis to at least one of a plurality of imaging positions; and

at least two detectors coupled to said detector transport member.

67. (new) An imaging system in accordance with Claim 66 comprising an arcuate base having an arcuate support assembly.

68. (new) An imaging system in accordance with Claim 66 wherein said detector transport member is moveable along an arc defined by said base.

69. (new) An imaging system in accordance with Claim 66 wherein said detector transport member comprises a toothed rack configured to engage a pinion that is rotatably coupled to said base, said rack and said pinion configured to transmit a force from said base to said detector transport member that causes said detector transport member to move relative to said base.

70. (new) An imaging system in accordance with Claim 69 wherein said pinion is powered from an electric motor in the base.

71. (new) An imaging system in accordance with Claim 70 wherein said electric motor is powered from an electrical source located in said base.

72. (new) An imaging system in accordance with Claim 69 wherein said toothed rack is coupled to an outer periphery of said detector transport member.

73. (new) An imaging system in accordance with Claim 66 wherein said detector transport member comprises a sliding member configured to engage a support assembly coupled to said base, said sliding member configured to guide said detector transport member along an arcuate path.

74. (new) An imaging system in accordance with Claim 73 wherein said support assembly comprises a groove and wherein said sliding member comprises an edge, said edge configured to engage said groove.

75. (new) An imaging system in accordance with Claim 74 wherein said support assembly comprises a plurality of sliding segments, each sliding segment configured to engage said edge.

76. (new) An imaging system in accordance with Claim 74 wherein said support assembly comprises a plurality of rollers, each roller configured to engage said edge.

77. (new) An imaging system in accordance with Claim 73 wherein said support assembly is configured to support a moment load from a weight of said detector transport member.

78. (new) An imaging system in accordance with Claim 66 wherein said base is configured to rotate said detector transport member about said examination axis through an arc of less than about one hundred eighty degrees.

79. (new) An imaging system in accordance with Claim 78 wherein said arcuate base is configured to rotate said arcuate detector transport member about said examination axis through an arc of about ninety degrees.

80. (new) An imaging system in accordance with Claim 78 wherein said arcuate base is configured to rotate said arcuate detector transport member about said examination axis through an arc of less than about ninety degrees.

81. (new) An imaging system in accordance with Claim 66 wherein said arcuate base is configured to maintain said arcuate detector transport member substantially stationary relative to said arcuate base.

82. (new) An imaging system in accordance with Claim 81 wherein said arcuate base is configured to maintain said arcuate detector transport member substantially stationary while said at least two detectors are receiving emission gamma rays.

83. (new) An imaging system in accordance with Claim 66 wherein said at least two detectors are fixedly coupled to said detector transport member.

84. (new) An imaging system in accordance with Claim 66 wherein said at least two detectors are coupled to said detector transport member through a tilting mechanism configured to modify an orientation of said at least two detectors with respect to said examination axis.

85. (new) An imaging system in accordance with Claim 66 wherein said at least two detectors comprises cadmium zinc telluride (CZT).

86. (new) An imaging system in accordance with Claim 66 wherein said at least two detectors comprises pixilated cadmium zinc telluride (CZT).

87. (new) An imaging system in accordance with Claim 66 wherein said at least two detectors are configured to receive emission gamma rays at each of said at least one of a plurality of imaging positions, said emission gamma rays emitted from an imaging volume proximate said examination axis.

88. (new) An imaging system in accordance with Claim 84 wherein said at least two detectors are oriented at about ninety degrees with respect to each other.

89. (new) An imaging system in accordance with Claim 66 wherein said at least two detectors are configured to receive emission gamma rays at each of said at least one of a plurality of imaging positions, said emission gamma rays emitted from an imaging volume proximate said examination axis.

90. (new) An imaging system in accordance with Claim 66 wherein all said detectors are positioned at different fixed locations along said detector transport member.

91. (new) A medical imaging apparatus comprising:

a generally arcuate shaped support assembly;

a detector transport member movably coupled to said generally arcuate shaped support assembly, the detector transport member spanning an arc of less than about one hundred eighty degrees about an examination axis; and

at least two detectors fixedly coupled to said detector transport member.

92. (new) A medical imaging apparatus in accordance with Claim 91 wherein said generally arcuate shaped support assembly comprises a generally C-shaped body.

93. (new) A medical imaging apparatus in accordance with Claim 91 wherein said detector transport member is generally arcuate shaped.

94. (new) A medical imaging apparatus in accordance with Claim 91 wherein said generally arcuate shaped support assembly is coupled to a base, said base comprising a power transmission member configured to move said detector transport member with respect to said base.

95. (new) A medical imaging apparatus in accordance with Claim 94 wherein said power transmission member receives power from an electric motor positioned in said base.

96. (new) A medical imaging apparatus in accordance with Claim 95 wherein said electric motor receives power from an electric source located in said base.